

(12) United States Patent

Sipma et al.

(10) Patent No.:

US 6,367,375 B2

(45) Date of Patent:

*Apr. 9, 2002

(54) APPARATUS FOR CUTTING AND STIRRING CURD

- (75) Inventors: Sijmen Sipma, De Knipe; Sjoerd Huitema, Koudum, both of (NL)
- (73) Assignee: Tetra Laval Holdings & Finance S.A.,
- (73) Assignee: Tetra Laval Holdings & Finance S.A., Pully (CH)
- (*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

- (21) Appl. No.: 09/865,361
- (22) Filed: May 25, 2001

Related U.S. Application Data

(63) Continuation of application No. 09/659,994, filed on Sep. 12, 2000, now Pat. No. 6,257,129.

(30) Foreign Application Priority Data

Sep.	17, 1999	(NL) 1013083
(51)	Int. Cl. ⁷	A23L 1/00; A01J 25/00;
		A01J 25/06; A23C 19/00; B01F 15/00

(56) References Cited

U.S. PATENT DOCUMENTS

3,829,594	Α	٠	8/1974	Schweizer 99/460
3,858,855	Α	٠	1/1975	Hazen 99/462
4,093,419	Α	•	6/1978	Tauber 366/147
4,108,058	Α		8/1978	Sjoholm et al.
4,183,674	Α	•	1/1980	Sudo et al 366/147
4,791,735	Α	*	12/1988	Forberg 366/149
4,989,504			2/1991	
6,257,129	B 1	*	7/2001	Sipma et al 99/466

* cited by examiner

Primary Examiner-Timothy F. Simone

(74) Attorney, Agent, or Firm-Fulbright & Jaworski L.L.P.

(57) ABSTRACT

Apparatus for cutting and stirring curd, comprising a curd vat with a shaft drivable for rotation, which shaft carries a number of cutting frames extending radially from the shaft and arranged on the shaft in staggered relation, each cutting frame having two frame girders, which extend radially from the drivable shaft and between which a lattice work is situated formed from longitudinal knives and transverse knives, the transverse knives being mounted on the frame girders by welding. The transverse knives form openings which are in line, in which the longitudinal knives are received with ample play, while means are provided for substantially preventing displacement of the longitudinal knives in the longitudinal direction.

6 Claims, 9 Drawing Sheets

